

## CLAIMS

What is claimed is:

- 1        1.        A method of seismic data processing, the method comprising:
  - 2                (a)        using a seismic source for propagating seismic waves into an earth
  - 3                                formation and receiving a signal indicative of a property thereof, said
  - 4                                signals resulting from interaction of said seismic waves with the earth
  - 5                                formation;
  - 6                (b)        defining a plurality of wavelets characteristic of said received signal;
  - 7                (c)        determining a particular one of said plurality of wavelets most
  - 8                                characteristic of said received signal, and
  - 9                (d)        adding said particular one of said plurality of wavelets to a select list of
  - 10                                wavelets.
  
- 1        2.        The method of claim 1 wherein defining said plurality of wavelets further
- 2                                comprises performing a wavelet transform of said received signal.
  
- 1        3.        The method of claim 1 further comprising:
  - 2                (i)        subtracting from said received signal a weighted particular one of said
  - 3                                plurality of wavelets, giving a subtracted signal,
  - 4                (ii)        determining an additional particular one of said plurality of wavelets most
  - 5                                characteristic of said subtracted signal, and
  - 6                (ii)        adding said additional particular one of said plurality of wavelets to said
  - 7                                select list of wavelets.

1        4.        The method of claim 3 further comprising subtracting from said subtracted signal  
2                a weighted additional particular one of said plurality of wavelets, and iteratively  
3                repeating steps (ii) and (iii).

1        5.        The method of claim 4, further comprising obtaining a time-frequency  
2                representation of said signal.

1        6.        The method of claim 5 further comprising determining an absorption coefficient  
2                from said time-frequency representation.